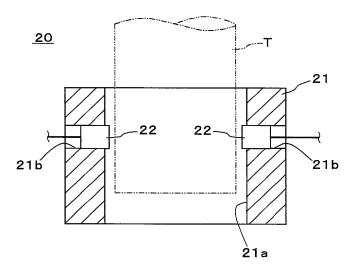


FIG. 2

20
21a
21
22
22
19

F I G. 4



F I G. 5

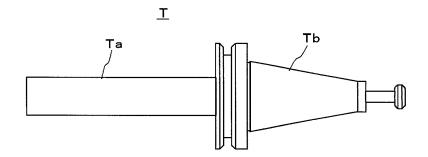


FIG. 6 START -S 1 ATTACH TEST TOOL TO SPINDLE MOVE TEST TOOL TO MEASUREMENT POSITION ROTATE SPINDLE AT LOWER ROTATION SPEED -S3 S 4 CALCULATE STATIC RUN-OUT  $\delta_s$ ROTATE SPINDLE AT HIGHER ROTATION SPEED CALCULATE DYNAMIC RUN-OUT  $\delta_{d}$ S 7 Ν  $\delta_{s0} > \delta_s$ ? **S8**  $\delta_{d0} > \delta_{d}$ ? OUTPUT OF ABNORMAL RUN-OUT OUTPUT OF NORMAL RUN-OUT S 1 1 MOVE TEST TOOL TO ORIGINAL POSITION S12 STORE TEST TOOL

**END**